

REMARKS

This application has been carefully reviewed in light of the Office Action dated January 31, 2006. Claims 1 to 12 are in the application, with Claim 11 having been withdrawn. Claims 1, 5, 9, 10, 11 and 12 are independent. Reconsideration and further examination are respectfully requested.

Applicants affirm the provisional election of the Group I claims, namely Claims 1 to 10 and 12. The requirement for restriction is, however, traversed. Traversal is on the ground that there would not be undue burden in examining two groups of claims in a single application. In particular, MPEP § 808 makes clear that in order to require restriction between independent or distinct inventions, reasons for insisting upon a restriction requirement, such as undue burden, must also be shown. In the present instance, it is not believed that there would be undue burden in examining both groups of claims in a single application, since the two groups of claims are not so different as would require a burden on the Examiner that is significantly beyond that of the normal burdens of examination. For example, independent Claim 11 (Group II) and dependent Claims 7 and 8 (Group I) are all directed to an printing apparatus. Therefore, Applicant respectfully submits that the groups of claims are not so distinct that examining them together would constitute an undue burden. Accordingly, reconsideration and withdrawal of the Restriction Requirement are respectfully requested.

The drawings were objected to under 37 C.F.R. § 1.84(p)(4) for allegedly using the same reference character "951(a)" to designate both "951(a)" and "951(b)". The specification was also objected to because reference character "951(b)" was allegedly not shown in the drawings. In this regard, a replacement sheet for Figure 3 is submitted herewith, wherein the reference character "951(a)" on the right side of the Figure has been

replaced with the reference character "951(b)". Withdrawal of these objections is therefore respectfully requested.

Claims 1, 2, 9 and 12 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,525,888 (Toya). Claims 3, 4, 7 and 8 were rejected under 35 U.S.C. § 103(a) over Toya in view of U.S. Patent No. 5,631,677 (Horigome) and U.S. Patent No. 6,563,766 (Nakamiya). Claims 5, 6 and 10 were rejected under § 103(a) over Toya in view of Nakamiya. Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 1, 9 and 12

The invention of independent Claims 1, 9 and 12 generally concerns an electric charging apparatus for holding and charging a secondary battery, attachable/removable to/from an electronic apparatus main body which can be driven with the secondary battery. Among its many features, the invention of Claims 1, 9 and 12 includes the features of (i) the electric charging apparatus displaying the residual capacity information of the secondary battery, and (ii) the electric charging apparatus receiving residual capacity information of the secondary battery, detected by the electronic apparatus to which the secondary battery is attached, from the electronic apparatus.

Referring specifically to claim language, independent Claim 1 as amended is directed to an electric charging apparatus for holding and charging a secondary battery, attachable/removable to/from an electronic apparatus main body which can be driven with the secondary battery. The electric charging apparatus includes reception means for receiving residual capacity information of the secondary battery, detected by the electronic apparatus to which the secondary battery is attached, from the electronic apparatus, display means for displaying the residual capacity information of the secondary battery, and display control means for causing the display means to display a battery residual capacity of the

secondary battery based on the residual capacity information received by the reception means.

Independent Claim 9 is directed towards a method substantially in accordance with the apparatus of Claim 1.

Independent Claim 12 is directed towards an apparatus substantially in accordance with that of Claim 1, but includes additional features. Thus, Claim 12 is directed to an electric charging apparatus for holding and charging a secondary battery, which is attachable/removable to/from an electronic apparatus main body which can be driven with the secondary battery. The electric charging apparatus includes a communication unit configured to perform communication with the electronic apparatus, a display unit configured to display the residual capacity information of the secondary battery, a display control unit configured to, when residual capacity information of the secondary battery detected by the electronic apparatus to which the secondary battery is attached is received via the communication unit, display a battery residual capacity on the display unit based on the residual capacity information, and a control unit configured to control electric charging of the secondary battery.

The applied art, namely Toya, is not seen to disclose or to suggest the features of the present invention, and in particular is not seen to disclose or to suggest at least the features of (i) an electric charging apparatus displaying the residual capacity information of a secondary battery, and (ii) an electric charging apparatus receiving residual capacity information of a secondary battery, detected by the electronic apparatus to which the secondary battery is attached, from the electronic apparatus.

As understood by Applicant, Toya discloses an integrated system of battery charger, battery case, and electronic equipment. The battery charger contains both a battery

pack and charging circuitry. The battery case contains multiple battery packs with intelligent switching to consecutively charge or discharge battery packs. The electronic equipment operates with the battery charger or battery case attached. Battery packs mount in a detachable fashion in compartments on either the battery charger or the battery case. Power is supplied to the electronic equipment from the battery packs through a system of terminals and contacts. (See Toya, Abstract).

Page 5 of the Office Action asserts that Toya (Figure 3 and Column 5, lines 17 to 18 and 25 to 27) discloses reception means for receiving residual capacity information, and display control means for displaying a battery residual capacity based on residual capacity information received.

However, Toya is not seen to disclose or suggest (i) an electric charging apparatus displaying the residual capacity information of a secondary battery, and (ii) an electric charging apparatus receiving residual capacity information of a secondary battery, detected by the electronic apparatus to which the secondary battery is attached, from the electronic apparatus.

In particular, the cited portions of Toya simply disclose that battery pack discharge current is measured by current detection means, and that the remaining battery pack capacity is computed by a microcomputer based on the measured results. (See Toya, Column 5, lines 15 to 18). A portable telephone microcomputer can compute and display information such as remaining telephone conversation time based on the battery information received from the microcomputer in the charger. (See Toya, Figure 3 and Column 5, lines 25 to 27).

However, displaying information on a portable telephone based on battery information received from a charger, as recited in Toya, is not the same as the electric

charging apparatus itself displaying the residual capacity information of the secondary battery, as in Claims 1, 9 and 12. In fact, the only display seen on Toya's charger is a LED display to indicate charging or completion of charging. (See Toya, Figure 2 and Column 4, lines 28 to 30).

Moreover, Toya is not seen to disclose or to suggest that an electric charging apparatus receives residual capacity information of the secondary battery, detected by an electronic apparatus to which the secondary battery is attached, from the electronic apparatus. In particular, Toya's current detection means (Figure 3, 42) and microcomputer for computing remaining battery capacity (Figure 3, 43) are located in the charger (Figure 3, 30). (See Toya, Figure 3 and Column 5, lines 16 to 27). Therefore, in Toya battery capacity information is not seen to be received by the electric charging apparatus from the electronic apparatus, or even detected in the electronic apparatus, as Toya's current detection and capacity computation take place in the charger.

Therefore, Toya is not seen to disclose or to suggest at least the features of (i) an electric charging apparatus displaying the residual capacity information of a secondary battery, and (ii) an electric charging apparatus receiving residual capacity information of a secondary battery, detected by the electronic apparatus to which the secondary battery is attached, from the electronic apparatus.

Accordingly, Claims 1, 9 and 12 are believed to be in condition for allowance, and Applicant respectfully requests same.

Claims 5 and 10

The invention of independent Claims 5 and 10 generally concerns an electronic apparatus, which an electric charging unit for holding and charging a secondary battery is attachable/removable to/from, and which can be driven with electric power from

the secondary battery that is attached to the electronic apparatus. Among its many features, the invention of Claims 5 and 10 includes the feature of the electronic apparatus detecting a residual capacity of the secondary battery in a state where the secondary battery is under an approximately constant load, when the electric charging unit for charging the secondary battery is attached to the electronic apparatus.

Referring specifically to claim language, independent Claim 5 as amended is directed to an electronic apparatus, which an electric charging unit for holding and charging a secondary battery is attachable/removable to/from, and which can be driven with electric power from the secondary battery that is attached to the electronic apparatus. The apparatus includes residual capacity detection means for detecting a residual capacity of the secondary battery in a state where the secondary battery is under an approximately constant load, when the electric charging unit is attached to the electronic apparatus, and residual capacity transmission means for transmitting residual capacity information detected by the residual capacity detection means to the electric charging unit.

Independent Claim 10 is directed to a method substantially in accordance with the apparatus of Claim 5.

The applied art is not seen to disclose or to suggest the features of Claims 5 and 10, and in particular is not seen to disclose or to suggest at least the feature of an electronic apparatus detecting a residual capacity of a secondary battery in a state where the secondary battery is under an approximately constant load, when an electric charging unit for charging the secondary battery is attached to the electronic apparatus.

In particular, as mentioned above, Toya discloses that current detection means (42) and microcomputer (43) for computing remaining battery capacity are located in the charger (30). (See Toya, Figure 3 and Column 5, lines 16 to 27). As such, Toya is

not seen to disclose or to suggest the electronic apparatus detecting a residual capacity of the secondary battery in the electronic apparatus at all, much less the electronic apparatus detecting a residual capacity of a secondary battery in a state where the secondary battery is under an approximately constant load, when an electric charging unit for charging the secondary battery is attached to the electronic apparatus.

Nakamiya is not seen to remedy the above-noted deficiencies of Toya. As understood by Applicant, Nakamiya is directed to voltage detection and a remaining battery voltage display for a secondary power source. A voltage correlated to the power source capacity of the secondary power source is detected as a detection voltage. The detection voltage is compared with a predetermined reference voltage so as to discriminate the remaining capacity of the secondary power source. (See Nakamiya, Abstract).

Pages 8 and 9 of the Office Action assert that Nakamiya (Column 3, lines 57 to 67 and Column 4, lines 18 to 26) discloses "predetermined timing is a status where the secondary battery is under pretty much a constant load", and "a discriminating result selecting unit for selecting anyone of plurality of voltage detecting result signal corresponding to said plurality of detected voltages, based on discriminating result of said power source kind discriminating unit to output same". Page 9 of the Office Action asserts that "[a]nyone of the detected voltage is an approximate constant load".

However, the cited portions of Nakamiya are not seen to disclose or to suggest an electronic apparatus detecting a residual capacity of a secondary battery in a state where the secondary battery is under an approximately constant load, when an electric charging unit for charging the secondary battery is attached to the electronic apparatus.

In particular, the cited portions of Nakamiya disclose that rapid charging detecting unit includes a charging condition detecting unit for detecting a condition of

charging to the secondary power source, a power generating condition detecting unit for detecting a power generating condition of the power generating device, and a rapid charging condition discriminating unit for discriminating being in a rapid charging condition in a case in which detecting of the charging is continuously repeated during a time longer than a predetermined charging reference time. (See Nakamiya, Column 3, lines 57 to 67). The voltage detection device includes a power source kind discriminating unit for discriminating a kind of secondary power source, and a discriminating result selecting unit for selecting anyone of a plurality of voltage detecting result signals corresponding to a plurality of detected voltages. (See Nakamiya, Column 4, lines 18 to 26).

However, it is not seen how Nakamiya's detection of various conditions such as charging, power generating, and rapid charging discloses or suggests that these conditions correspond to a condition wherein the status of the battery is under an approximately constant load.

Moreover, it is not seen how "any" of the detected voltages selected by Nakamiya's discriminating result selecting unit is an "approximate constant load", or how this discloses that the battery is in a state where it is under an approximately constant load. In fact, as understood by Applicant, Nakamiya's selection of the plurality of voltages is based on the result of the power source kind discriminating unit, which discriminates a kind of the secondary power source based on a designating signal from outside, rather than anything based on the load on the battery. (See Nakamiya, Column 4, lines 23 to 26 and 60 to 65).

Therefore, the applied art is not seen to disclose or suggest at least the feature of an electronic apparatus detecting a residual capacity of a secondary battery in a

state where the secondary battery is under an approximately constant load, when an electric charging unit for charging the secondary battery is attached to the electronic apparatus.

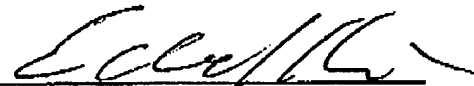
Accordingly, Claims 5 and 10 are believed to be in condition for allowance, and Applicant respectfully requests same.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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